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SAFEGUARDING YOUR FOOD AND DRUG SUPPLY -- NO. 47

U. S. Department of Agriculture  
district, Food

A radio talk by W. W. Vincent, chief of the western district, Food and Drug Administration, U. S. Department of Agriculture, delivered July 2, 1931, at 12:45 p.m., through Station KGO, San Francisco, and associated National Broadcasting Company stations.

MR. LAMB: Good afternoon, folks.

As announced last Thursday, our interview with W. W. Vincent this afternoon is on the subject of "fungi". Perhaps the first thing that most of us want to know is a sure way of differentiating between a mushroom and a toadstool. And what is that difference, Mr. Vincent?

MR. VINCENT: Mr. Lamb, I did not expect to be put on the witness stand so soon. However, I will answer that. The name "toadstool" is the term applied to poisonous varieties of mushrooms. First, however, I wanted to tell you about truffles.

MR. LAMB: Truffles - I have read about them, seen a few, but have never eaten one to the best of my knowledge. From their appearance, I don't believe I ever will.

MR. VINCENT: You have missed something good, but they do look rather peculiar. They grow underground, certainly are high priced and highly relished by the folks who like them. Occasionally we get an importation in which they are mixed with pâté de foies gras, or goose liver paste.

MR. LAMB: So they grow underground, something like a potato, I suppose. Can truffles be grown as a cultivated crop?

MR. VINCENT: Yes, they can, but whether or not they are I don't know.

MR. LAMB: Perhaps you had better tell us something about this truffle culture.

MR. VINCENT: All right, I'll do the best I can.

As I said, truffles are fungi and there are, generally speaking, three kinds: white, brown and black truffles, the latter being the most highly prized. Truffles vary in size from that of a walnut to that of an apple, and usually, wart-like protuberances cover them. They have a characteristic aroma and taste. Like other fungi, that have no roots or leaves, as such, they start from a spore which produces a rather white-appearing, mold-like thread which penetrates throughout the soil. This is known as mycelium and if used for planting is referred to as spawn. The mushroom grows similarly, except that the mushroom forms on top the soil whereas the truffle grows underneath.

Do you know how they harvest truffles?

MR. LAMB: No, I don't. I could make a wild guess, but it would probably be wrong. So perhaps you had better tell us about this harvesting operation.

MR. VINCENT: It's somewhat unusual. Truffle gatherers use trained hogs in their harvesting operations. Recall, I told you truffles had a characteristic aroma?

MR. LAMB: Yes.

MR. VINCENT: Well, these trained hogs can smell truffles at a considerable distance and, since there is no evidence above ground as to where there may be a choice truffle, the hog depends solely on his sense of smell in locating it. The harvesters lead the hogs through the fields and, upon scenting a truffle, the hog will rapidly uncover it with its snoot. Immediately the truffle is uncovered there is a scramble on the part of the owner to get it before the hog does. This sometimes requires a sharp blow on the hog's snoot. A good truffle-hunting hog will sometimes harvest up to forty pounds of truffles in a day.

The production and gathering of truffles is limited largely to France and Italy and such few importations of this luxury as reach our shores usually come from those countries.

While most of you do not buy canned truffles, if you should, just keep this one fact in mind. When imported in cans, they come both as whole truffles and likewise as a product called "peelings of Truffles". Naturally this latter product, consisting of the peelings together with some small pieces, is not so desirable as the whole truffles, nor will you find it so expensive as those truffles I mentioned as being packed in liver paste, sometimes labeled "Truffled Goose Liver Paste", or in the French, as "Pâté de Foies Gras Truffée".

MR. LAMB: I gather then that a truffle might be classed as an underground mushroom. Is that correct?

MR. VINCENT: Yes.

Coming now to mushrooms, perhaps I should elaborate a little on my first statement, that is, there is little difference between a toadstool and a mushroom except that the toadstool is poisonous. Some of the poisonous varieties, of which there are a number, owe their toxic qualities to an alkaloid, muscarine. Probably your friends have told you a number of tests by which they tell the poisonous from the edible varieties of mushrooms. My friends, unless you know the species you cannot tell; the silver coin test has no value; the color of the gills, unless you know the species, means nothing to you.

Many of you doubtless believe that the mushroom is a recent inclusion in the dietary. Such is not the case. They have been considered a luxury for many centuries. The Roman naturalist, Pliny, living in the first century, A.D., knew them. It is rumored that Nero disposed of a number of people whose presence he no longer desired by serving them a meal in which poisonous varieties were included. No less a person than the Czar Alexis of Russia is reported to have been poisoned by toadstools. Enough of history.

While a number of species of mushrooms are found in the United States, the term mushroom, generally speaking, is applied only to the so-called cultivated mushroom (*agaricus campestris*). Its culture is interesting; but time does not permit me to tell of that.

I should tell you that the bulk of canned mushrooms, and most of the mushrooms that reach you fresh, are produced in houses and caves and under closely controlled conditions. Several countries, particularly France, Italy, Japan and the United States, are commercially canning fresh mushrooms. The dried mushrooms produced in France and Italy are of a different species than those canned fresh, while the dried mushroom of Japan is still another species from that produced in Italy and France. The canned fresh mushroom of France, as also of the United States, is the species Agaricus, which I mentioned. The canned fresh mushroom of Japan, which you find labeled "Matsutake", is of different species and shape from the French and American canned product.

When you buy canned mushrooms there are many things that you should know if you would discriminate in the making of your purchases. Canned mushrooms come to you in different size containers. The sizes most frequently found range from two to eight ounces. In preparation for canning the mushrooms, after cleaning, are drained and washed, generally blanched with steam or hot water, and then packed in cans with a brine solution, which is usually taken from the blanching tanks. The canned product, after being sealed, is sterilized under steam pressure.

The French word, "Champignons", usually found on the imported French product, means "Mushrooms". Where the word, "Button", appears on labels it means only the buds, or the unopened mushrooms gathered before the veils break from the stem underneath the cap.

French packers occasionally use other terms to designate sizes on their mushroom labels: for example: "Extra Miniature", "Miniature", "Sur Extra Petite", "Sur Extra", "Small Extras" or "Extra Petite", and "Extras", designate the buttons from very small to rather large size. To illustrate the range of sizes as covered by those names, I would state that the term, "Extra Miniature", represents the smallest buttons, generally carrying from 150 to 200 in each one-half pound can; whereas the largest or "Extras" usually carry from 30 to 40 in one half-pound can. These terms indicate only size. All mushrooms bearing such terms are of the extra quality or fancy grade, as we would term it.

The general practice among French packers is to cut the bud or cap off flush with the stem. French packers, as do some American packers, also pack a product called "Pieces and Stems". This is the lowest grade and is composed of broken pieces of mushrooms, generally with an excess of stems obtained from other mushrooms in the process of trimming other grades for canning.

In addition to the grades that I have already mentioned, there is a "Choice" grade and a "First Choice", or "Premier Choice", grade. The "Choice" grade takes a price slightly in excess of the "Pieces and Stems". It contains mushrooms of various sizes and there may be stems attached to them as long as an inch or an inch and a half. The "First Choice" quality

represents a more uniform pack than the "Choice", with consequent better appearance, evidence of somewhat more careful sorting, and perhaps better workmanship.

The Japanese mushroom generally bears no markings particularly designating quality. The word "Matsutake" designates the product. They may be small or large according to the packer's supply. The words, "Best Quality", or "Extra Fancy", or "Best Canned", or "Toast Mushrooms", and "Extra Choice", are merely the packer's sales descriptions.

While American-canned mushrooms are not to be found in all cities of the United States, they do have a wide distribution. American canners in general use only the best quality buttons for canning. While some canners use the terms, "First Choice", or "First Choice Buttons", on their labels, such terms are not in general use. The American packers make no attempt to describe the size; rather, in the smaller cans they use the smaller mushrooms, with larger sizes in the larger tins. The very largest mushrooms are not canned whole but go to the fresh markets. American canners leave some stem attached to the cap portion, the stem length increasing correspondingly with size of button. Some packers, to designate size, use the terms, "Large Buttons", "Medium Buttons", "Small Buttons", and "Minatures". People seem to prefer the smaller buttons, consequently they sell for more, but there is no difference in their quality.

Some sliced mushrooms are canned in America. These are whole mushrooms cut with proper length of stem according to size of the mushrooms and sliced with machines before canning. Packers usually use a mushroom that has developed slightly beyond the button stage, that is, the veil underneath the cap has broken and the mushroom is opening up. "Pieces and stems", as canned in America, likewise consist of broken mushrooms and contain an excess-- often a large excess -- of added stems obtained in the process of trimming other mushrooms for canning.

The word, "Hotels", has sometimes been applied to "Pieces and Stems" by both American and French packers. Should you find this word, just remember it designates a product that consists essentially of pieces of mushrooms with stems usually in excess and should be designated "Pieces and Stems". Ordinarily it represents the lowest grade packed.

Coming onto the American market in some volume now are Mushroom Soup and Mushroom Broth. This material is a by-product obtained in the process of blanching the mushrooms prior to canning. In blanching, the mushroom loses, in addition to moisture, certain of its soluble-salt-carrying flavor. This, with the addition of some salt, represents the broth and the soup you are offered. You may encounter the term, "Broiled Mushrooms", and this means the cap only which has been cooked with butter. Where you see the terms "Best Flavor", "Unbleached", "Fancy", "Natural Flavor" and "Hothouse Grown", remember they have no particular significance. They are equally applicable to the products of all American mushroom packers.

Since mushrooms are expensive, always read the net weight statements carefully and remember: Should you encounter such statement as the following: - "This can contains 4 ounces net of cooked mushrooms, the

equivalent of about 7 ounces fresh mushrooms", such a statement means no more than the statement, "Net Weight of Mushrooms 4 Ounces". Should a can declare the total net contents as "7 Ounces Net Contents Broth and Mushrooms", you will get no more mushrooms than you will from the can which reads "4 Ounces Net Weight Mushrooms". You find these mushroom cans in definite sizes: - There is the 2-ounce, the 4-ounce, the 8-ounce, etc.; and those figures represent the net weight of mushrooms within the can, not the total contents as represented by liquid and mushrooms.

